

REMARKS

Claims 1, 4-9 and 11-15 are pending in this application. By this Amendment, claims 1, 8, 9 and 11 are amended and new claims 12-15 are added. Claims 2, 3 and 10 are canceled without prejudice to, or disclaimer of, the subject matter recited therein. Support for the amendments and the new claims can be found, for example, in the specification (see paragraphs [0017], [0018], [0025], [0027], [0028], [0048], [0059] and [0062]). No new matter is added. Reconsideration and allowance of the claims are respectfully requested in view of the foregoing amendments and the following remarks.

I. Objection To The Claims

The Office Action objects to claim 10 due to informalities. Claim 10 is canceled, thus rendering the objection moot. Accordingly, withdrawal of the objection is respectfully requested.

II. Rejection Under 35 U.S.C. §103

The Office Action rejects claims 1-11 under 35 U.S.C. §103(a) over European Patent No. 1,028,359 A1 to Shiozawa et al. ("Shiozawa"). Claims 2, 3 and 10 are canceled, thus rendering the rejection moot as to those claims. As to the remaining claims, the rejection is respectfully traversed.

Claim 1 recites:

A discrimination medium comprising:
 a cholesteric liquid crystal layer...; and
 a multilayer film...,
 wherein the cholesteric liquid crystal layer and the
 multilayer film is provided are arranged in this order in a
 direction in which natural light may enter, the multilayer film
 reflects the interfering light as a second reflection light, and the
 discrimination medium is discriminated by using the first
 reflection light and the second reflection light,
 when the discrimination medium is viewed at a
 predetermined angle, the first reflection light reflected by the
 cholesteric liquid crystal layer and the second reflection light

reflected by the multilayer film are approximately equal to or different from each other in color,
the first reflection light is circularly polarized light having a predetermined center wavelength and a predetermined polarization direction, and
the second reflection light includes circularly polarized light having a circularly polarized direction opposite to that of the first reflection light.

Claims 8, 9 and 11 recite similar features. For at least the following reasons, Shiozawa would not have rendered obvious the above features of claims 1, 8, 9 or 11.

As described in the specification, Applicants' claimed discrimination medium comprises a multilayer film **103** that is fixed onto an article **101** by an adhesive layer **102** (see specification, Fig. 1). A cholesteric liquid crystal layer **106** is fixed onto the multilayer film **103** by a second adhesive layer **104**, and a surface protection layer **106** is provided on top of the cholesteric liquid crystal layer **106** (*Id.*).

When the discrimination medium is viewed at a predetermined angle, light reflected by the cholesteric liquid crystal layer and light reflected by the multilayer film are approximately equal to or different from each other in color, as recited in claim 1, and similarly in claims 8, 9 and 11. By providing: (1) a multilayer film disposed below a cholesteric liquid crystal layer having a stacked structure in which first light transparent films having a first refraction index and second light transparent films having a second refraction index are alternately laminated in a thickness direction; (2) the first light transparent film and the second light transparent film having an interface therebetween; and (3) said interface repeatedly exists and reflects light so as to generate interfering light, as recited in claim 1 and similarly in claims 8, 9 and 11, the following optical effects are achieved, described in detail below. None of these optical effects would have been rendered obvious to a person of ordinary skill in the art at the time of the invention, presented with the disclosure of Shiozawa, without the benefit of Applicants' specification.

First, the cholesteric liquid crystal layer **106** of Applicants' device selectively reflects circularly polarized light having a certain wavelength, whereas circularly polarized light of a different wavelength is reflected by the multilayer film **103**. With reference to Fig. 3 of the specification, Fig. 3 shows a cholesteric liquid crystal layer **106** that selectively reflects right-handed circularly polarized light having a predetermined wavelength, and transmits left-handed circularly polarized light and right-handed circularly polarized light having a wavelength other than the predetermined wavelength. The transmitted light is reflected by the multilayer film **103** and, at this time, the polarization direction of the light is inverted (see specification, Figs. 1, 3 and 4). As a result, the circularly polarized light that has been reflected by the multilayer film **103** transmits through the cholesteric liquid crystal layer **106** and passes therethrough via the reverse route with respect to the incident light, and thereby transmits to the viewing surface (see specification, Fig. 4).

Second, keeping the above framework in mind, when Applicants' discrimination medium is viewed through a first optical filter that allows only circularly polarized light that was reflected by the cholesteric liquid crystal layer **106** to pass through, the circularly polarized light reflected by the multilayer film **103** is not capable of being viewed, since the polarization direction of the light is inverted and, thus, only the circularly polarized light reflected by the cholesteric liquid crystal layer **106** can be viewed at this instance (see, e.g. specification, paragraph [0036]) However, when the first optical filter is switched with a second optical filter that allows only circularly polarized light having an inverse polarization direction to pass therethrough, this time circularly polarized light reflected by the multilayer film **103** is capable of being viewed, instead of the circularly polarized light reflected by the cholesteric liquid crystal layer **106**.

Third, because the circularly polarized light reflected by the multilayer film **103** has a different wavelength than circularly light reflected by the cholesteric liquid crystal layer **106**,

the color of both sets of light, respectively, are different. Thus, when the second optical filter is used, the color in view is changed according to the viewing angle, within a color range that is *different* from that of the circularly polarized light reflected by the cholesteric liquid crystal layer **106**. Such a change of color is not capable of being viewed with the first optical filter, as mentioned above.

All of the above optical effects are achieved by the design of Applicants' device, and thus when the discrimination medium is viewed at a predetermined angle, a first reflection light reflected by the cholesteric liquid crystal layer and a second reflection light reflected by the multilayer film are approximately equal to or different from each other in color, the first reflection light being circularly polarized light having a predetermined center wavelength and a predetermined polarization direction, and the second reflection light including circularly polarized light having a circularly polarized direction opposite to that of the first reflection light, as recited in claim 1, and similarly in claims 8, 9 and 11.

Shiozawa merely discloses a device in which a hologram forming layer **11a** is formed below a reflective film **11** when the discrimination medium is viewed at a predetermined angle. A first reflection light reflected by the cholesteric liquid crystal layer and a second reflection light reflected by the multilayer film are approximately equal to or different from each other in color, the first reflection light being circularly polarized light having a predetermined center wavelength and a predetermined polarization direction, whereas the second reflection light includes circularly polarized light having a circularly polarized direction opposite to that of the first reflection light, that reflects only either of right-handed circularly polarized light and left-handed circularly polarized light to produce reflected light (Shiozawa, paragraph [0031]). The hologram forming part **11a** of Shiozawa reflects light of the same circular polarization as the reflective film **11**, and light reflected by the hologram forming layer **11a** is typically weaker when compared to that of a cholesteric liquid crystal

layer (*see, e.g.* Shiozawa, Fig. 3). As a result, the optical effects and function of Shiozawa's device are entirely different from that of Applicants' device, and Shiozawa fails to provide any reason or rationale for one of ordinary skill in the art to have modified Shiozawa in the exact manner necessary to have achieved Applicants' claimed device and optical effects, without the benefit of Applicants' specification, and without destroying the intended structure and effect of Shiozawa.

The Office Action asserts that because Shiozawa discloses that the multi-layered films "may be any one of mediums having optical selective reflectivity and circularly polarized light selectivity," one of ordinary skill in the art would have been allegedly motivated or have had reason to modify the device of Shiozawa in the manner necessary to have obtained Applicants' claimed device (Office Action, page 4). However, the significant differences between the optical effects and design of Applicants' claimed device and Shiozawa's device, as described above, are wholly unrelated to whatever chemical medium is selected, and would certainly not be achieved by merely modifying the medium(s) of the film (e.g. polymer films formed through fixation of cholesteric liquid crystal orientation, films formed by dispersing a cholesteric liquid crystal in mediums and/or various high-molecular or low-molecular weight cross-linked crystals; see Shiozawa, paragraphs [0033] to [0035]). Mere changes in the chemical medium, all to obtain the same reflective film 11 of Shiozawa, cannot be considered a sufficient reason, rationale or motivation for one of ordinary skill in the art to have modified the device of Shiozawa in the manner necessary to have obtained Applicants' device and distinctive optical effects, for at least the reasons set forth above.

In view of the foregoing, Shiozawa would not have rendered claims 1, 8, 9 and 11 obvious. The remaining claims variously depend from claim 1 and, likewise, also would not have been rendered obvious by Shiozawa for at least the reasons set forth above, as well as

for the additional features they recite. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

III. New Claims

By this Amendment, new claims 12-15 are added. New claims 12-15 depend from claim 1 and, thus, distinguish over the applied references for at least the reasons discussed above with respect to claim 1, as well as for the additional features they recite.

Prompt examination and allowance of new claims 12-15 are respectfully requested.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Sarah Lhymn
Registration No. 65,041

JAO:SQL/jth

Attachments:

Request for Continued Examination
Petition for Extension of Time

Date: April 26, 2010

OLIFF & BERRIDGE, PLC
P.O. Box 320850
Alexandria, Virginia 22320-4850
Telephone: (703) 836-6400

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